

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-6 were pending in this application. By way of this reply, claim 6 has been cancelled without prejudice or disclaimer. Thus, claims 1-5 are pending in this application. Claim 1 is independent. The remaining claims depend, directly or indirectly, from claim 1.

Claim Amendments

Claims 1-3 and 5 have been amended in this reply to clarify the present invention recited. Support for these amendments may be found, for example, in the original claims, paragraphs 0035-0037 of the specification, and Fig. 2. No new matter has been added.

Objection(s)

The drawings are objected to for not showing every feature recited in the claims. Applicant has amended the specification in view of this objection. Specifically, the specification has been amended to clarify the phrase “having its center around the semiconductor light emitting device 104” in paragraph 0045 thereof. As shown in, for example, Figs. 3 and 4, a contour of the light transmitting member 108 as a whole is formed in a roughly semi-oval shape. The rear sealing part 202, which is a half part of the light transmitting member 108 on a rear side of the light transmitting member 108, is formed in a quarter-sphere shape, accordingly. It is

noted that Fig. 3 is a vertically sectional view of the light transmitting member 108. The curved surface of the rear sealing part 202 in the form of the quarter shape is determined so that its focal point is positioned in proximity of the light emitting device 104. In addition, the front sealing part 204, which is the remaining part of the light transmitting member 108, is also formed in a quarter-sphere shape. Because of the semi-oval shape, the rear sealing part 202 and the front sealing part 204 are different in radii of curvatures. Accordingly, withdrawal of this objection is respectfully requested.

Claim 2 is objected as being informalities. In view of the amendments to the specification as discussed above, claim 2 has been amended in this reply to clarify the present invention recited. Accordingly, withdrawal of this objection is respectfully requested.

Rejection(s) under 35 U.S.C § 102

Claim 6 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,328,456 ("Mize"). Claim 6 has been cancelled in this reply. Thus, this rejection is now moot. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C § 103

Claims 1-3 and 5

Claims 1-3 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,199,779 ("779 Sato") in view of Mize. Independent claims 1 has been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

Independent claim 1, as amended, recites a structure of a vehicular headlamp having a semiconductor light emitting device. Specifically, as shown in, for example, Fig. 1, the vehicular headlamp 400 of the present invention is composed of a plurality of light source units 100. Referring now to Figs. 2-4, the light source unit 100 includes a semiconductor light emitting device 104 disposed to face upward on a substrate 106, a reflector 102, having an aperture in a front side, configured in a partial semi-elliptical shape to surround the semiconductor light emitting device 104, and a light transmitting member 108 configured to cover the semiconductor light emitting device 104. The light source unit 100 may include a lens 110 disposed in the front side. The reflector 102 has focal points F1 and F2, one of which is positioned in proximity of the semiconductor light emitting source 104, thereby allowing light from the semiconductor light emitting device 103 to be reflected toward the lens 110 through the other focal point F2.

The light transmitting member 108 is configured in a semi-oval shape, which is composed of a rear sealing part 202 and a front sealing part 204. Thus, the rear sealing part 202 and the front sealing part 204 are formed in roughly quarter-sphere shapes, respectively. The rear sealing part 202 is configured to transmit a part of light emitted by the semiconductor light emitting device 104 to go straight toward the reflector 102, whereas the front sealing part 204 is configured to deflect the other part of the light toward the lens 110.

In view of above, claim 1, as amended, includes limitations of “a semiconductor light emitting device facing in a direction substantially perpendicular to a forward direction,” and “a reflector configured in a partial semi-elliptical shape having an aperture in a front side to surround said light emitting device, wherein said reflector has an optical center thereof in

proximity of said semiconductor light emitting device, and reflects light incident from said semiconductor light emitting device toward the front side.”

’779 Sato, in contrast, fails to show or suggest at least the above limitations as recited in claim 1 as amended. ’779 Sato merely discloses a conventional headlamp comprising an ellipsoidal mirror and a light bulb. Specifically, as shown in Fig. 3, a light projection unit 20 includes an ellipsoidal mirror 22 and a light bulb 24 disposed in the ellipsoidal mirror 22. As is apparent from Fig. 3, the light bulb 24 is disposed to face in a forward direction. In addition, light emitted by the light bulb 24 is lower nature of convergence as compared with that of a semiconductor light emitting device. Accordingly, in fact, a part of light emitted by the light bulb 24 is incident on a lower portion of the ellipsoidal mirror 22. In other words, because of the facing direction of the light bulb 24, the mirror 22 is configured to surround the light bulb 24 around from behind.

In addition, ’779 Sato fails to show or suggest the light transmitting member as recited in claim 1. It is asserted that a portion of the light bulb 24 corresponds to the light transmitting member as recited in claim 1. However, ’779 Sato simply states that “the filament of the light bulb 24 is located near the first focal point O_1 of the mirror 22.” See col. 2, lines 57-58. Although a portion of the light bulb 24 may be made of transparent material such as glass, there exists nothing in ’779 Sato which shows or suggests that the transparent portion of the light bulb 24 *deflects* light emitted by the filament toward a front side.

Further, Mize fails to show or teach that which ’779 Sato lacks. Mize is directed to a specific configuration of a light emitting diode used, for example, in a vehicular headlamp.

There exists nothing in Mize which shows or suggests arrangement of the light emitting diode as recited in claim 1. Further, Mize is completely silent with respect to a reflector as recited in claim 1.

In view of above, '779 Sato and Mize, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 1 as amended. Thus, claim 1 is patentable over '779 Sato and Mize. Dependent claims are also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 4

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over '779 Sato in view of Mize and U.S. Patent No. 5,459,664 ("'664 Sato"). As discussed above, in view of complete lack of disclosure of the semiconductor light emitting device and the reflector as recited in claim 1, '779 Sato and Mize do not anticipate or render claim 1 obvious. In addition, '644 Sato fails to teach that which '779 Sato and Mize lack. '644 Sato merely teaches a light distribution pattern having a clear-cut line formed by a shade 37. There exists nothing in '644 Sato which shows or suggests arrangement of the semiconductor light emitting device and the reflector as recited in claim 1.

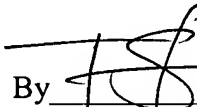
In view of above, '779 Sato, Mize, and '644 Sato, whether considered separately or in combination, fail to show or suggest the present invention as recited in claim 1 as amended. Thus, claim 1 is patentable over '779 Sato, Mize, and '644 Sato. Dependent claim 4 is also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 02008.142001).

Dated: November 22, 2005

Respectfully submitted,

By 

Thomas K. Scherer
Registration No.: 45,079
OSHA · LIANG LLP
1221 McKinney St., Suite 2800
Houston, Texas 77010
(713) 228-8600
(713) 228-8778 (Fax)
Attorney for Applicant